

Arizona Peace Officer Standards and Training

Basic Curriculum Model Lesson Plan

LESSON TITLE: PHYSICAL EVIDENCE PROCEDURES

SUBJECT:	Physical Evidence Procedures
AZ POST DESIGNATION:	5.3
HOURS:	6
COURSE CONTENT:	An examination of the proper techniques for identifying and handling different types of evidence. Methods of packaging and marking evidence for identification are provided. Maintaining continuity in the handling of evidence from its discovery until it is offered in court is emphasized. The functions of a crime laboratory and the importance of scientific evidence in the prosecution of criminal cases are explained.
PERFORMANCE OBJECTIVES:	Upon completion of this course of instruction, students using notes, handouts and other support materials as references, within the allotted time, will:
5.3.1	Identify the following as common types of evidence found at crime scenes: <ul style="list-style-type: none">A. Body fluids (blood, saliva, semen, etc.).B. Hairs.C. Fibers.D. Glass.E. Paint.F. Firearms/ammunition/casings.G. Cellular phones/computer and electronic devices.H. Other weapons.I. Flammables.J. Narcotics/drugs.K. Documents.

- L. Tools and tool/pry marks.
- M. Foot/tire impressions.
- N. Fingerprints.
- O. Scent articles.
- P. Clothing.
- Q. Miscellaneous articles left by the suspect (cigarette butts, beverage containers, etc.).

5.3.2 Identify recommended procedures for collecting, marking (or tagging), packaging the following items of evidence:

- A. Fingerprints.
- B. Tools and tool/pry marks.
- C. Firearms/ammunition/casings.
- D. Bite marks.
- E. Documents.
- F. Glass.
- G. Hairs.
- H. Fibers.
- I. Body fluids (blood, saliva, semen, etc.).
- J. Clothing.
- K. Scent articles.
- L. Liquids.
- M. Minute items.
- N. Narcotics/drugs.
- O. Alcohol.

P. Vehicles.

Q. Soil.

5.3.3 Identify the types of information that can be obtained from laboratory analysis of each of the following items of physical evidence:

A. Body fluids (blood, saliva, semen, etc.).

B. Hairs.

C. Fibers.

D. Glass.

E. Paint.

F. Firearms/ammunition/casings.

G. Other weapons.

H. Flammables.

I. Narcotics/drugs.

J. Documents.

K. Tools and tool/pry marks.

L. Foot/tire impressions.

M. Fingerprints.

N. Scent articles.

O. Clothing.

P. Miscellaneous articles left by the suspect (cigarette butts, beverage containers, etc.).

5.3.4 Identify the meaning of the term "chain of custody."

5.3.5 Identify that the following must be recorded in order to document chain of custody:

A. Description of evidence.

- B. Time, date and location where evidence was found.
 - C. Name or initials, ID numbers, etc., of the individual who recovered the evidence and each person subsequently having custody.
 - D. Location where evidence was transported and stored.
 - E. Each time evidence is removed and/or returned to/from storage.
- 5.3.6 Given a written description of evidence collected at a crime scene, **correctly document** chain of custody in appropriate reports/using appropriate forms.
- 5.3.7 Identify for what types of evidence and under what conditions a Court Order for Identifying Physical Characteristics may be obtained as per A.R.S. §13-3905.
- 5.3.8 Identify appropriate safety precautions for handling the following types of evidence:
- A. Body fluids (blood, saliva, semen, etc.).
 - B. Narcotics/drugs.
 - C. Drug paraphernalia (needles, etc.).
 - D. Explosives.
 - E. Hazardous materials.

DATE FIRST PREPARED: June 1995

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SME Committee

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INSTRUCTOR REFERENCES:

CLASS LEVEL: Student

TRAINING AIDS: Handout on Packaging Guidelines for submission to DPS Lab.

INSTRUCTIONAL STRATEGY: Interactive lecture and class discussion.

TRAINING AIDS: Handout on packaging guidelines for submission to DPS Lab.

INSTRUCTIONAL STRATEGY: Interactive lecture and class discussion.

SUCCESS CRITERIA: 70% or higher on a written, multiple-choice examination.

COMPUTER FILE NAME: 5.3 Physical Evidence Procedures.

DATE RELEASED TO THE SHARE FILE: May 27, 2022

I. INTRODUCTION

- A. Instructor – (self) introduction.
- B. Preview of performance objectives.

II. BASIC CONCEPTS

- A. Evidence (definition):
 - 1. All the means by which any alleged matter of fact, the truth of which is submitted to investigation, is either established or disproved.
- B. Two (2) types of evidence:
 - 1. **Testimonial:** Evidence given in the form of a statement made under oath, usually in response to questioning.
 - 2. **Physical (or real) evidence:** Any type of evidence having an objective existence (that is, anything with size, shape and dimension) found in connection with an investigation that may aid in identifying a suspect or the circumstances under which a crime occurred.
- C. Value of physical evidence.
 - 1. Can prove a crime has occurred and can establish key elements of the offense (i.e., the crime of sexual assault requires a showing of non-consensual intercourse or oral sex contact – torn clothing and bruises on the victim may be sufficient to show a lack of consent).
 - 2. Can place a suspect in contact with the victim or crime scene (i.e., cat hair found on a rape suspect when the victim owned several cats).
 - 3. Can establish the identity of the suspect or person associated with the crime (i.e., fingerprints).
 - 4. Can exonerate the innocent.
 - 5. Can corroborate the victim's testimony (i.e., a female hitchhiker picked up by a motorist).
 - a. She claimed he pulled a knife and attempted to rape her.
 - b. During the struggle, her thumb was cut.
 - c. She escaped and contacted the police.
 - d. When confronted, the suspect denied everything.

- e. The officer noticed a small spot of dried blood on the suspect's jacket lapel.
 - f. The suspect claimed the blood came from him in a shaving accident.
 - g. The officer submitted the jacket and a sample of blood from the victim and the suspect.
 - h. Lab results indicated the blood could not have come from the suspect (wrong type), but could have come from the victim.
- 6. Can generate a confession or statements from the suspect when he/she is confronted with physical evidence.
 - 7. Physical evidence is more reliable than most eyewitnesses.
 - a. Memory fades with time.
 - b. People tend to fill in gaps to events they did not observe in their entirety. (This behavior usually occurs subconsciously).
 - 8. Physical evidence is often expected by juries in criminal trials.
 - 9. The absence of physical evidence at a crime scene may indicate fraud or false reports (i.e., insurance claims of burglary when no evidence of entry can be found).

III. CRIME SCENE

- A. First officer at the scene. **INSTRUCTOR NOTE:** Discuss "Locards" Principle. (At a crime scene, "everything you touch, touches you back") Theory of Transfer.
- B. The first officer's most important task is to protect and prevent the destruction of evidence.
 - 1. Assume the suspect has left physical evidence.
 - 2. Do not destroy or change anything.
- C. Arrival at the scene:
 - 1. Record times.
 - a. When police were dispatched on the call.
 - b. When the first officer arrived.
 - c. When the crime was committed (if it can be reasonably determined).
 - 2. Assume the worst – never assume the crime is over and the suspect is gone before the

officer's arrival.

3. Approach:
 - a. With caution – officer safety.
 - b. Be calm.
 - c. Be deliberate.

- D. Entering the scene:
 1. Try to quickly form an estimate of the situation.
 - a. What happened?
 - b. What type of crime?
 2. Observe and record details.
 - a. Doors and windows: Opened? Closed? Locked? Broke?
 - b. Lights: On? Off? Refrain from operating any light switch until documented.
 - c. Transient evidence, Odors: Perfume, cigarette, gun smoke, gas, etc.
 - d. Weather & lighting conditions. ***INSTRUCTOR NOTE: Thermostat setting(s)***
 3. Nothing should be moved unless absolutely necessary. Before anything is moved, its position should be noted, photographed (if possible).
 4. Never use anything at the scene.
 - a. Ashtrays.
 - b. Toilets.
 - c. Sinks.
 - d. Towels, etc.

- E. Protecting the scene:
 1. Police personnel – if enough police are available, use officers. Crime Scene Technicians can be used as well.
 - a. As a last resort, use civilians – document who they are, where they live and

- include them in the report.
 - b. Large open areas – use police cars, poles, trees, etc., and crime scene tape.
 - c. Scenes that have been barricaded should include the suspect’s path of entry and exit.
 - d. Keep the number of people in and around the scene to an absolute minimum. This includes police officers, sergeants, captains, etc.
2. It is easy to reduce a crime scene, but difficult to increase due to possible tainted evidence.
- F. Injured person at the scene:
- 1. Life-saving efforts take precedence over the collection of evidence.
 - 2. Give or arrange for immediate first aid.
 - 3. If first aid is not immediately essential:
 - a. Quickly sketch the victim's position.
 - b. Photograph victim’s position.
 - c. If available, an officer’s body worn camera can be used for video documentation.
 - d. Commit the victim's position and condition to memory, then to writing as soon as possible.
 - 4. Before the victim is transported from the scene, or while at the hospital, pay particular attention to the victim's hands and fingernails for possible evidence of suspect (i.e., hair, tissue, blood, fibers, etc.).
- G. Paramedics.
- 1. Without interfering with their duties, explain to them how to enter the scene without disturbing evidence.
 - 2. Watch their activities – note anything they move.
 - 3. Document their identities and duty assignments (same with anyone who renders assistance or aid to the victim).
 - 4. Officers should accompany the victim to the hospital if possible (statements, dying declaration, etc.).

5. Arrange for collection, removal and disposition of victim's clothing (trace evidence).
- H. Protective sweep. **INSTRUCTOR NOTE:** *Discuss*
1. After the emergency no longer exists and the scene is secure, the officer needs to determine if a search warrant will be required.
- I. Firearm(s) at the scene. **P. O. 5.3.2C**
1. General rule is that objects should be left untouched if the area can be secured.
 2. Do not pick up a weapon unless you or a citizen are in immediate danger.
 3. In areas where conditions are unstable, the officer should secure the firearm by:
 - a. Documenting its position on the ground or floor by use of the officer's body worn camera, if available, a folded Field Interview card, cones, etc.
 - b. Photographing it where it lies.
 4. Picking up a suspect weapon at the scene (when necessary).
 - a. Using/wearing gloves, pick the weapon up with two (2) fingers by the grip. Most weapons have grips that cannot normally be printed.
 - b. Do not insert anything into the barrel or trigger guard(it destroys evidence).
 - c. Do not pick up by hammer or trigger. **INSTRUCTOR NOTE:** *Basically, DO NOT touch the weapon. Emphasize that they know which round came out of which cylinder.*
 5. In a serious scene where an investigator will be called:
 - a. Do not pull back the slide of an automatic.
 - b. Do not touch the trigger or safety.
 - c. Do not turn or touch the cylinder of a revolver.
 6. Unloading and/or impounding a firearm (if necessary).
 - a. Do not impound a loaded weapon.
 - b. Document any changes you made in the weapon (unloading, engaging safety, etc.).
 - c. If you unload a revolver, mark which cylinder was under the hammer and mark

which cylinders contained fired or unfired rounds (diagram) and note which direction the cylinder rotated (S&W counter clockwise, Colt clockwise).

- J. What to do until the investigator arrives – obtain a case number and time of call.
1. Write down names, addresses and phone numbers of witnesses, victims, suspects and other persons known to have entered the scene.
 2. If people went to the hospital and if so, which hospital? How were they transported? Document the name of the individual or ambulance service. **INSTRUCTOR NOTE:** *Know what Hospital, and how they were transported. (fire, ambulance, etc.)*
 3. Document – who was at the scene when the officer(s) arrived?
 4. Establish the basic facts – however, do not undertake a lengthy interrogation.
 5. Separate witnesses – ask them not to discuss events in order to lessen the possibility of distortion by suggestion.
 6. Do not discuss the crime with bystanders or witnesses.
 7. Listen! Be unobtrusive. You may hear something vital to the investigation (gestures, excited utterances, etc.).
 8. Protect evidence from:
 - a. Elements.
 - b. Crowds.
 - c. Other officers.
 - d. Family Members.

IV. PROCESSING THE CRIME SCENE

- A. The first arriving officer will normally have the responsibility of stabilizing and protecting a serious crime scene; the responsibility of processing the scene will be left to trained investigators and/or specialists.
- B. There may be occasions when the reporting officer will be called on to handle a serious scene himself/herself.
- C. Every officer needs to at least be familiar with crime scene processing in order to fully understand why the protection and preservation stage of an investigation is so important.
- D. Specialized assistance:

1. Crime scene specialists or police ID technicians versed in fingerprinting, photography and collection of evidence.
 2. Air units – surveillance and aerial photography.
 3. Forensic pathologists – usually not available at the scene. Part of the medical examiner’s office. Will conduct an autopsy.
- E. Hospital emergency room personnel:
1. Conduct sexual assault exams and complete “rape kits.” Unless specifically trained forensic personnel are available.
 2. Draw blood (in certain cases, they will supply a sample to the police).
 3. Make determinations of possible causes of injury in child abuse cases.
 4. Be cognizant of “HIPPA” laws.
- F. Investigative plan of action (generally) – careful examination.
1. Note taking. **P. O. 5.3.6**
 2. Sketching.
 3. Photography.
 4. Collection of evidence.
- G. Note taking (field notes) – chronological order.
1. Clear and legible (so someone else can read and understand them).
 2. Specific – avoid terms like “near,” use measurements and be specific.
 3. Tape recorders – some officers use tape recorders at the scene and then later transcribe the notes from the tape (no need to impound this tape).

V. CRIME SCENE SEARCHES

- A. Should be done methodically and systematically from the outside in. **INSTRUCTOR NOTE:** 1. *Have a plan, cover all areas. Do not rely on intuition.* 2. *Research.* 3. *Appoint a finder.*
- B. Never search on intuition or just “mill” around poking at things.
- C. Limit crime scene searches to as few officers/agency employees as is reasonably necessary.

- D. Types of searches:
1. Quadrant or zone search:
 - a. The area to be searched is divided into quadrants with one (1) searcher assigned to each quadrant.
 - b. In larger areas, each quadrant may again be divided.
 2. Strip method of search:
 - a. Area is blocked out in the form of a rectangle. **INSTRUCTOR NOTE:** Discuss using "lane search" method for outdoor crime scene searches.
 - b. Searchers proceed slowly at the same pace, parallel to each other and parallel to one (1) side of the rectangle.
 - c. If evidence is found, the search halts momentarily until it is cared for.
 - d. When searchers reach the end of the rectangle, they double back and proceed along new lanes. Searchers proceed slowly in line with others.
 3. Spiral method: Two (2) or three (3) searchers follow each other in a path of a spiral starting on the outside and spiraling toward the center.
 4. Wheel method:
 - a. Searchers gather at the center and proceed outward along the radius.
 - b. Seldom-used method because the major problem is that the area to be searched increases rapidly as the searchers move away from the center.
- E. Crime scene photography.
1. Most serious crime scenes will be photographed by a trained technician.
 2. However, there will be situations in which a patrol officer will photograph a scene.
 3. The officer needs to be aware of the role the camera plays in processing a crime scene.
 4. Cameras:
 - a. 4 x 5 format:
 - i. Great resolution and detail.

- ii. Not very portable.
 - b. 35 mm SLR/Digitals.
 - i. Most versatile.
 - ii. Requires some training.
 - c. Polaroid (instant cameras).
 - i. Inexpensive.
 - ii. Easy to use.
 - iii. Okay for general photographs.
 - iv. Very poor for close up or photos requiring high resolution.
 - v. Photo will fade.
 - d. Officer's Body Worn Camera
- 5. Film:
 - a. Color for general crime scene photography. The higher the film speed (ASA or DIN), the lower the resolution.
 - b. Black and white – good for photos where color is not important, but relationships between objects are.
- 6. Number of photographs – general rule is “better to overshoot.”
- 7. Types of photographs:
 - a. Location – photographs depicting the location of the crime scene. Should include locations of doors and windows and shots facing the four (4) directions.
 - b. Consideration may be given to aerial photographs.
 - c. Close up – should be taken in addition to long- and medium-range photos. One (1) close up should be taken with a scale or ruler and one (1) without, in case the court considers the inclusion of a scale as an alteration of the scene.
 - d. The use of a color scale for photographs of injuries should be used. The color scale can be obtained from any photo store.
- 8. Evidence photographs.

- a. Prior to moving or changing an item in any way, an evidence photograph should be taken. **INSTRUCTOR NOTE:** *Sometimes photographs do not show the true color of injury. Discuss the benefit of three (3) photos of each item: General area, specific area and specific object.*
 - b. Overall photographs (general area), Mid-Range photographs (specific area), and Close-up photographs (specific object).
 - c. Photo should also include evidence identifier prior to collection.
9. Negatives from film– should be retained to demonstrate that the photo has not been altered.
- 10 Digital photographic files and video from Body Worn Cameras should be retained.
- F. Crime scene sketches and diagrams – supplements do not replace photos.
1. Clarifies the scene and makes relationships apparent.
 2. Can more clearly depict the overall layout of the scene.
 3. Sketches should include accurate measurements from definite reference points. **INSTRUCTOR NOTE:** *Be as accurate as possible, but might note: “not to scale” in the case report if not truly accurate.*
 - a. Reference points should be two (2) relatively permanent features (i.e., north wall and east wall).
 - b. Reference lines should form lines that make a right angle (90°).

VI. EVIDENCE: TYPES, USES AND COLLECTION

- A. Fingerprints, palm prints and footprints are among the most important pieces of evidence to be found at most crime scenes.
1. Displays individual characteristics – can be traced to only one (1) person. If a fingerprint is found at a crime scene, it will place its owner at the scene. **INSTRUCTOR NOTE:** *See packaging guidelines for lab submission handout.*

P. O. 5.3.1M
P. O. 5.3.2A
P. O. 5.3.3M
 2. A fingerprint is the deposit of oils, water, salts, etc., that is left after a suspect touches something. Shows the pattern of the friction ridges.
 3. Types of fingerprints:
 - a. Prints from fingers that have been contaminated by other material (ink,

pigments, oils, paint, blood, flour, grease, etc.). **INSTRUCTOR NOTE:** Also, glove prints can be obtained like latents. Cannot be traced directly to one (1) person's fingers, but can be traced to a specific glove in that person's possession.

- b. Latent prints (the "average" print found at a scene) caused by small amounts of oil or grease.
 - c. The fingers and palms contain no oil glands, only sweat.
 - d. The oil found on latent prints is usually picked up on the fingers from other parts of the body.
4. Development of latent prints:
- a. Powders: Come in a variety of types and colors. Black (most common) gray, white, copper and magnetic. Type is usually determined by the background color of the item being dusted.
 - b. Brush: Fiberglass, camel's hair, feather, nylon, etc.
 - c. Latents on paper:
 - i. Recent latents can be lifted with powder depending on the "shine" of the paper (glossiness).
 - ii. Older prints – after a period of time, perspiration and grease will be absorbed by the paper.
 - iii. Iodine development – usually not done at the scene (equipment too bulky).
5. Preservation of prints:
- a. Latent print card – dusted latent is lifted with adhesive tape and transferred to a print card.
 - b. Photograph – print is photographed, especially if it is visible without development.
- B. Blood.
- P. O. 5.3.1A**
P. O. 5.3.2K
- 1. ID of a suspect. Analysts can positively identify a suspect if a sample of the suspect's DNA is available. **INSTRUCTOR NOTE:** Deoxyribonucleic acid (DNA) is a nucleic acid.
 - a. In DNA profiling the relative lengths of sections of repetitive DNA, such as short tandem repeats and minisatellites, are compared. **DNA profiling was**

developed in 1984 by English geneticist Alec Jeffreys of the University of Leicester, and was first used to convict Colin Pitchfork in 1988 in the Enderby murders case in Leicestershire, England. Many jurisdictions require convicts of certain types of crimes to provide a sample of DNA for inclusion in a computerized database. This has helped investigators solve old cases where the perpetrator was unknown and only a DNA sample as obtained from the scene (particularly in rape cases between strangers).

- b. This method is one of the most reliable techniques for identifying a criminal, but is not always perfect, for example if no DNA can be retrieved, or if the scene is contaminated with the DNA of several possible suspects.
2. No DNA from two (2) people is the same, except for identical twins. The DNA is extracted from a cell contained in a biological sample of evidence (semen, hair, blood, etc.).
INSTRUCTOR NOTE: *Mark packages containing body fluids "Biohazard".*
 3. It is, therefore, important to collect, protect and preserve any biological evidence.
 4. Lab analysis. **P. O. 5.3.3A**
 - a. Species – the laboratory can also determine if the blood is human or animal.
 - b. ABO typing – this is a typing system for blood that is derived from the enzymes and proteins and other substances found in the fluids composing blood.
INSTRUCTOR NOTE: *Only one (1) of many typing systems.*
 5. Blood-stained materials.
 - a. Air-dry stained material on a piece of clean dry paper at room temperature.
INSTRUCTOR NOTE: *Before collecting, always wear latex gloves.* **P. O. 5.3.8A**
 - b. Do not dry by blowing with hot air (cook the cells).
 - c. Never package wet material, it will decompose. Remember blood is biological tissue. **INSTRUCTOR NOTE:** *Discuss putrefaction of evidence.*
 - d. All wet samples must be air dried prior to being packaged. **INSTRUCTOR NOTE:** *Beware of your department's policy*
 6. Package in a paper bag with tissue paper placed between folds of the stained material.
 7. For material that cannot be sent directly to a lab: Scrape the dried blood onto a clean piece of paper with a new razor blade. **P. O. 5.3.2.O**
 - a. Also scrape a non-stained area adjacent to the stain (as a blank sample) onto another piece of paper.

- b. Fold each paper, securing the scrapings and place each paper in an envelope.
 - c. Mark and seal each envelope.
 - d. Collect a comparison sample, if possible, of the surface the dried blood was on.
8. Liquid blood. **P. O. 5.3.3A**
P. O. 5.3.2K
- a. Blood obtained from a victim or a suspect for analysis must be placed in the color-coded vials or tubes which are available at hospitals.
 - b. The color-coded caps on blood vials are standard for all laboratories in the U.S.
- C. Firearms. **P. O. 5.3.1F**
P. O. 5.3.3C
- 1. Dust for prints.
 - 2. Unload (safely!) and dust ammo.
 - 3. Attach string tag and seal string.
- D. Spent bullets. **P. O. 5.3.1F**
P. O. 5.3.2C
- 1. Place in a plastic or glass vial and seal with adhesive label or tape.
 - 2. Do not mar, scratch or mark the side of the bullet. **INSTRUCTOR NOTE:** *Explain striations from barrel rifling.*
 - 3. Jacket and jacketed round is where striations are left.
- E. Spent cartridge cases. **P. O. 5.3.3F**
- 1. Cartridges from revolvers have firing pin impressions that can be compared to ID the gun it was fired in.
 - 2. Automatics, in addition to firing pin impressions, have:
 - a. Extractor marks. **P. O. 5.3.3F**
 - b. Ejector marks.
 - c. Breech face or bolt marks.
 - 3. Package separately. If you need to mark them, make your mark inside the empty casing.
- F. Tablets and capsules. **P. O. 5.3.1I**

1. Laboratory analysis: With suspected narcotics/ drugs, the laboratory analysis will be able to identify what type of drug it is and whether or not it is a usable quantity.
P. O. 5.3.3I
 2. Officers must use appropriate safety precautions when handling narcotics/drugs.
P. O. 5.3.8B
P. O. 5.3.8C
 - a. Gloves and a face mask should be utilized.
 - b. When dealing with narcotics that involve gases/odors, officers should elect to use a SCBA (self-contained breathing apparatus). **INSTRUCTOR NOTE:** *Discuss the recent Fentanyl incidents involving officers as examples.*
 - c. When handling drug paraphernalia, officers need to be constantly aware of the possibility of being stuck or cut by needles.
 - d. Such a “stick” may result in the acquisition of Hepatitis or AIDS.
 - e. All containers of drug paraphernalia with sharp objects need to be identified on the outside of the container for safety.
 3. Place in an evidence envelope. **P. O. 5.3.2P**
- G. Cellular phones and computers/electronic devices
1. Do not view or open any applications on cellular phones/computers/electronic devices without consulting your legal advisor for the possibility of needing a search warrant. There is an expectation of privacy established through the courts for electronic devices.
 2. If you believe a suspect is in the process of deleting evidence, unplug a computer, **place a cellular device in airplane mode or a Faraday bag, wrap in aluminum foil**, or turn off (and remove) the battery from a cellular device **as the last option**. Then seek guidance from your legal adviser/on-call County Attorney or specialized investigators.
 3. It is best practice when dealing with electronic evidence to consult your legal adviser, on call County Attorneys or specialized investigators for guidance.
- H. Hair and fibers. **P. O. 5.3.1B**
P. O. 5.3.1C
1. Collect with clean tweezers or forceps. **P. O. 5.3.2I**
P. O. 5.3.2J
 2. Use an evidence vacuum sweeper if one is available. **INSTRUCTOR NOTE:** *Neither hair nor fiber exhibit individual characteristics that will allow them to be traced to specific individuals, but they do exhibit class characteristics that will allow us to narrow the field*

of possible suspects. The hair follicle can show DNA.

P. O. 5.3.3B

3. Place the hair in a plastic or glass vial, folded paper or envelope and seal. **INSTRUCTOR NOTE:** *Beware of individual department policies.*

P. O. 5.3.2I

P. O. 5.3.2J

- I. Impressions – footprints, dust prints, blood prints, tool marks and tire prints. Photograph – one (1) without a ruler or scale and one (1) with.

P. O. 5.3.2K

P. O. 5.3.1L

P. O. 5.3.2B

P. O. 5.3.2E

1. Photograph in oblique lighting.
2. Cast – make a plaster or other type of cast only after you have photographed it.
3. A common item at crime scenes is tool marks – after photographing, try to obtain and impound the item the tool mark is in if it is small and portable enough.
 - a. Impressions - Are made by a harder material being pressed against a softer material / i.e. a crowbar (steel) being pressed against a wooden door or aluminum frame.
 - b. Striations - Are caused by a hard object (i.e. pry bar or screwdriver etc.) going or being scraped across the face of a softer material / i.e a door lock plate, window sill, door lock on a car or a car window frame etc.

- J. Flammables.

P. O. 5.3.2H

P. O. 5.3.EH

1. Many fire departments are trained in the suppression of a fire using minimal methods. This will facilitate the gathering of flammable item evidence.
2. Flammable evidence is common in fire/arson cases and is usually collected under tile shingles, carpet and floor baseboards.
3. The unconsumed flammable liquid is analyzed at the laboratory in a gas chromatography for the presence of an accelerant.
4. Only a minute quantity of the accelerant is needed. (Collect the original container as evidence when available).
5. Information obtained on the analysis includes the presence of an accelerant and the specific type used.

- K. Transient Evidence.

P. O. 5.3.1N

1. This type of evidence could be found in a crime scene involving perfume, cologne or other natural/ unnatural scents.
 2. A laboratory analysis of scent articles may include the ability to determine what type of cologne, perfume or other product caused the scent. **P. O. 5.3.3N**
 3. Items should be air-dried prior to packaging for the laboratory. **P. O. 5.3.3M**
- L. Clothing. **P. O. 5.3.10**
1. A common type of evidence found at a crime scene includes clothing. This may be clothing of the victim, suspect or witnesses.
 2. An officer needs to be mindful of “theory of transfer” and trace evidence when handling any type of clothing. **P. O. 5.3.2L**
 3. Officers should always handle clothing items while wearing gloves which should be changed after each item. **P. O. 5.3.2L**
 - a. Package clothing individually.
 - b. Any clothing items that are moist should be air-dried prior to being packaged.
 - c. Any package containing clothing with body fluids should be clearly marked “biohazard” on the outside.
 4. Laboratory analysis of clothing will reveal the presence of items such as blood, saliva and semen and allow for DNA testing. **P. O. 5.3.3O**
 5. Clothing will also reveal tattooing and powdering from gunshot wounds to establish the proximity of the weapon to the clothing article.
- M. Miscellaneous articles left by the suspect (cigarette butts, beverage containers, etc.).
1. Other common types of evidence found at a crime scene include miscellaneous items left by the suspect. This may include cigarette butts and beverage containers such as cans, bottles and packages along with glasses. **P. O. 5.3.1P**
 2. The officer must be mindful to handle the miscellaneous articles carefully so that fingerprint analysis and DNA analysis may be conducted at the laboratory. **P. O. 5.3.3P**
- N. Bite marks. **P. O. 5.3.2D**
1. It is becoming increasingly common for suspects to bite their victims.

- a. This is especially found in sexual assault cases and sex offenses such as child molestations.
 - b. Such bite marks are usually found in the genitalia and are important for investigative purposes. **INSTRUCTOR NOTE:** *You must use a trained expert such as a Sexual Assault Nurse Examiner to collect this type of evidence in sensitive area. Discuss reasons for a bite mark.*
2. Bite marks may be matched by an odontologist for use in court to provide suspect identification.
 3. Bite marks' evidence is usually obtained through the use of casts made by the suspect's teeth and/or photographs for analysis.
 4. Saliva in and around bite mark(s). Swab for DNA and submit to the lab (Consult your trained evidence technicians for guidance on collecting this type of evidence).
- O. Glass. **P. O. 5.3.1D**
1. Another common type of evidence found in crime scenes is glass. Officers must be careful to not get cut processing the scene. **P. O. 5.3.2H**
 2. Glass should be collected carefully in order to avoid breakage and then tagged.
 - a. It should be packaged in a soft material enclosed within a hard, sealed box with "fragile – glass" written on the outside.
 - b. Extra care must be taken by the officer in transporting this item of evidence.
 3. Laboratory analysis of glass can reveal the following: **P. O. 5.3.3D**
 - a. Fingerprint evidence/comparison.
 - b. Direction of force prior to glass breakage.
 - c. Sequence of bullet holes.
 - d. DNA from blood.
- P. Liquids. **P. O. 5.3.2N**
1. Liquids (such as alcohol) should be collected for evidence using sterile containers. **P. O. 5.3.2Q**
 - a. Gloves should always be worn.
 - b. If the liquid contains biohazard material, the officer should use a disposable mask/ eye goggles.

2. As with all items of evidence, liquids need to be gathered/packaged in separate containers. **INSTRUCTOR NOTE:** *Discuss evaporation.*

Q. Narcotics/drugs.

P. O. 5.3.1I

1. Officers must be cautious while collecting narcotics/drugs to prevent contamination with the officer. Gloves and/or masks should always be used along with SCBA's if there is a possibility officers will be inhaling toxic fumes.
2. Care must be taken to not contaminate or damage the packages that narcotics/drugs are found in.

P. O. 5.3.2P

- a. All drugs should be packaged in separate containers.
- b. If a drug is already contained in a container, the container should be packaged separately in a box.
- c. If crime occurred near or in a "Meth Lab", you must call the HazMat unit.

R. Documents.

P. O. 5.3.1J

1. Documents that officers will come in contact with in relation to criminal activity will usually be in the form of paper documents and credit cards.
2. Laboratory analysis of documents will include fingerprinting, handwriting analysis, photography enhancement of erasures, identifying photocopied documents presented as originals and computer entered codes and data on credit cards.

P. O. 5.3.3J

3. Care must be taken to preserve the documents/ credit cards in an original state so as not to damage potential individual characteristics.
4. The documents should be packaged separately in a plastic bag or manila envelope when dry. Remember to not enclose wet documents before air-drying.

S. Have the trained technician lift a footprint using the EDPL (Electrostatic Dust Print Lifter).

P. O. 5.3.2E

1. Lift prints you cannot see. **INSTRUCTOR NOTE:** *Stress not walking around the crime scene.*
2. Never place a shoe in a footprint or a tool in a tool impression.

T. Paint chips or smears.

P. O. 5.3.1E

1. Lab analysis of paint chips can match samples to suspect vehicles and tools.

P. O. 5.3.3E

2. Small items – package and impound the entire item containing the chips or smears. Make sure you protect the area with the chips or smears by covering them with paper.

P. O. 5.3.2G

3. Loose chips – collect them with tweezers, forceps or wooden tongs.

- a. Scrape with a clean knife, razor or wooden instrument.
- b. Remove the entire sample down to bare wood or metal.

P. O. 5.3.2S**U. Soil.**

1. Collect at least one-half ($\frac{1}{2}$) pound when possible.
2. Place in a bag, then put the bag in a box and mark the seal.

V. Explosives (substances and devices).**P. O. 5.3.8D****P. O. 5.3.8E**

1. Do not attempt to de-activate devices yourself. Obtain specialized help from a bomb team.
2. Notify your supervisor.
3. Explosive materials and other hazardous materials require specialized handling and storage.

P. O. 5.3.1G**P. O. 5.3.3G**

- a. Unless you are specially trained to do so, do not process these materials without direct assistance from a bomb squad member or Hazardous Materials squad member.
- b. All packages must be clearly marked.
4. Other weapons commonly found at crime scenes.
 - a. Laboratory analysis of other weapons includes:
 - i. Knives – blood, hair and fingerprints can reveal DNA.
 - ii. Blunt objects – blood, hair and fingerprints can reveal DNA.
 - b. Analysis of other weapons can reveal injury patterns to the body.

VII. EVIDENCE: COLLECTION AND PRESERVATION – SPECIFIC TYPES AND SPECIAL HANDLING SITUATIONS**P. O. 5.3.2**

- A. Physical evidence is collected most often for the purpose of conducting a comparison with other items or materials.
1. Can prove a person's guilt or innocence.
 2. The following points are important considerations when evidence is to be collected for analysis:
 - a. Sufficient samples – should be collected.
 - i. Judging the amount of specimen to obtain is largely a matter of experience.
 - ii. As a general rule, however, as much of the material as is reasonably possible to collect should be taken.
 - iii. "Better to get too much, than not enough."
 - b. Known or control samples.
 - i. Are needed for laboratory analysis.
 - ii. If a bloodstained shirt is submitted to a crime laboratory, the blood typing results have to be compared with something to be useful.
 - iii. A known sample of the victim's and/or suspect's blood is needed.
 - iv. If an automobile paint specimen is sent for analysis, a known sample of paint from the questioned vehicle needs to be submitted for comparison.
 - c. Blank samples.
 - i. Are often needed by the lab.
 - ii. Consider a blood stained carpet – in collecting the bloodstain, the segment of unstained carpet should be collected from an area next to the stained area.
 - iii. This blank or control sample is needed for testing to verify that the sample alone does not interfere or influence analysis.
- B. Emphasize: Suspect, control and blank samples must never be packaged together.
INSTRUCTOR NOTE: Contamination or cross contamination.

VIII. LEGAL ASPECTS FOR EVIDENCE**P. O. 5.3.7**

- A. Prior to collecting evidence, the necessity of obtaining a search warrant or court order for

identification must be considered.

- B. A.R.S. §13-3905. Detention for obtaining evidence of identifying characteristics.
1. A peace officer may make a sworn application to a magistrate to detain a person under reasonable suspicion for a felony in order to obtain identifying physical characteristics including, but not limited to: ***INSTRUCTOR NOTE: Discuss: The exclusionary rule.***
 - a. Finger, palm and footprints.
 - b. Handwriting samples.
 - c. Blood samples.
 - d. Urine samples.
 - e. Saliva samples.
 - f. Hair samples.
 - g. Photographs.
 2. Chain of custody (definition): Accounting for each person who handled an item of physical evidence from the time of collection until final disposition. **P. O. 5.3.4**
 - a. Should be as short as possible.
 - b. Must be unbroken.
 - c. Storage of evidence must be secured to prevent the question of tampering or alteration.
 3. Identification of evidence. **P. O. 5.3.5**
 - a. The officer collecting the evidence at a crime scene must be able to identify it in court as being the same piece of evidence he/she collected at the scene, e.g:
 - i. Serial numbers. The item's serial number should be recorded on reports, property invoices, envelopes and tags.
 - ii. Identifying marks. Unique marks on the item should be enumerated in reports and on property invoices.
 - b. Non-serialized items (no serial number) should be:
 - i. Packaged.

- ii. Sealed.
- iii. External surface of the evidence package marked. (In particular, gasoline, powdered or liquid drugs, arson evidence, etc.).
- c. Avoid marking the actual items of evidence themselves. **P. O. 5.3.2**
 - i. Marks can obliterate traces or marks that a criminalist can find.
 - ii. An exception to this is forged or altered paper documents, money or credit cards.
 - iii. Examples:
 - a) Small articles can be placed in sealable containers, envelopes or vials.
 - b) Large items can be secured with a stringed tag and/or adhesive label.
 - c) Do not place adhesive labels on visible wood or metal surfaces, firearms, documents, credit cards or driver's licenses.
- 4. Marking evidence containers or tags and labels. These should contain at least the following information: **P. O. 5.3.5**
 - a. Agency and agency's case number. **P. O. 5.3.5B**
P. O. 5.3.5D
 - b. Brief description of the item.
 - c. Name or initials of person collecting item.
- 5. Marking specific items. **P. O. 5.3.2**
 - a. Pill vials containing evidence should be sealed by wrapping a completed gummed label around the cap and mouth of the vial like a "flag." The vial is then placed in a completed property envelope. **INSTRUCTOR NOTE:** *Demonstrate with a vial and adhesive evidence labels.*
 - b. Evidence placed in glass or plastic vials would be:
 - i. Dried blood crusts.
 - ii. Dried saliva swabs.
 - iii. Expended shell casings.

- iv. Trace evidence (fillings, powder, fire, clay samples for safes, samples of insulation, flammable materials (small samples), alcohol, drugs in powder, liquid or pill form, etc.).

IX. MARKING AND PACKAGING EVIDENCE

A. Any small item of evidence that will not decompose rapidly (dried biological evidence).

B. Firearms, tools, knives or other weapons.

P. O. 5.3.2C

1. On a firearm, put a stringed tag through the trigger guard and seal the knot on the string of the tag by placing a gummed label around the knot. ***INSTRUCTOR NOTE: Demonstrate with "red" or safe firearms. Do not use an operational weapon.***
2. Tools and knives can be marked the same way, with a string label and using a gummed label to seal the knot.
3. Tool or weapon is placed in a proper sized evidence box or envelope, sealed, and marked over the seal with an adhesive label or tape. ***INSTRUCTOR NOTE: Marking evidence is usually a simple matter of exercising common sense.***
4. Do not deface it or destroy evidence.
5. Seal it and mark the seal.

C. Items too big for containers: Affix a string property tag to the item and use an adhesive label to seal the string. This procedure applies to items such as:

1. Tires.
2. Rifles and shotguns.
3. Floor Jacks.
4. Television sets.
5. Stereos.

D. Vehicles.

P. O. 5.3.2R

1. Vehicles seized as evidence and impounded should be marked after being processed by placing a string evidence tag through the steering wheel and then sealing the knot and string with an adhesive label.
2. The vehicle will then be impounded in a departmentally approved lot.

E. Forgery evidence.

P. O. 5.3.2F

1. **Paper documents** – officer should place his/her name or initials, serial number, date and DR number on the back of the check, credit card or other document in such a manner that it will not interfere with any other writing, stamps or endorsements. **INSTRUCTOR NOTE:** *Best practice is forgery evidence should not be written on directly or placed in an envelope and written on. Doing this will damage the evidence.*
2. **Credit cards** – mark by placing a piece of transparent tape to the back of the card below the signature panel, then place the required information on the tape. **INSTRUCTOR NOTE:** *Do not mark on the signature or magnetic tape.*
3. **Witness signature** – the witness who accepted the document and who is turning it over to the police, must initial the item prior to giving it to the police. **INSTRUCTOR NOTE:** *This is done so that the witness can also ID the evidence in court.*

X. CONTAMINATION OF EVIDENCE

- A. Physical evidence is usually subjected to a comparative analysis. It is a known source that is compared to a suspect source. **P. O. 5.3.2**
- B. Contamination occurs when the known source is packaged with the suspect source of any other source of material.
- C. Known sources and suspect, questioned and control samples must be packaged separately. If there is any question, package it in its own container.
- D. Similar items from different locations are packaged separately, for example:
1. A burglary suspect was apprehended in a residential area. The suspect had splinters, paint and other building material on his/her jacket.
 2. The officer collected samples from around the point of entry for comparison; however, the evidence was all packaged together in a paper bag.
 3. The lab was unable to tell if the debris was from the crime scene or from the known samples placed in the bag.
- E. Segregate evidence.
- F. Handle physical evidence as little as possible. Too much handling may:
1. Obliterate fingerprints.
 2. Dislodge hairs, fibers, debris, etc.
 3. Break brittle evidence.

4. Contaminate biological evidence.

XI. DEAD PERSON AT THE SCENE

- A. Make sure the person is ~~really dead~~. deceased. **INSTRUCTOR NOTE:** *If there is the slightest doubt about death, call the paramedics.*
- B. Obvious signs of death:
 1. Marked rigor mortis – biochemical changes in the muscles of dead people resulting in obvious stiffening.
 - a. Begins approximately two (2) to six (6) hours after death in the small muscles of the neck and jaw.
 - b. Complete in the body within six (6) to 12 hours.
 - c. Remains two (2) to three (3) days.
 - d. Disappears in the same order it appeared.
 2. Lividity or post-mortem lividity.
 - a. After blood circulation stops, the blood settles to the lower portion of the body.
 - b. Leaves blue or reddish violet marks on the skin.
 - c. Occurs in about one (1) hour, fully livid after three (3) to four (4) hours.
 - d. Will set and if the body was moved, lividity will not be consistent.
 - e. Can be confused with bruising.
 - f. Possible to confuse signs of carbon monoxide poisoning with lividity.
 3. Changes in the eyes.
 - a. Cornea becomes dull – a film may appear over the eye.
 - b. No pupil response to light (this is not an absolute indicator of death, some brain damage will cause the same lack of light reaction).
 - c. Touching the eye produces no reaction.
 4. Decapitation.

5. Decomposition.
- C. Do NOT disturb the scene once death has been determined (make sure there are no undiscovered bodies, living or dead, at the scene).
1. Secure the scene.
 2. Notify the immediate supervisor.
 3. Officer's primary job is preservation of the scene and evidence.
 4. In homicide, suicide and unknown death situations, an investigator will usually assume disposition.

XII. CONCLUSION

- A. Review of performance objectives.
- B. Final questions and answers.
- C. Instructor closing comment(s).
- D. Crime scene processing is normally an exercise in common sense:
 1. Stabilize.
 2. Secure.
 3. Protect.
 4. Process.
 - a. Thoughtfully.
 - b. Intelligently.
 - c. Carefully.